TECHNOLOGY LICENSE AGREEMENT

This Technology License Agreement ("Agreement") is made on this 29th day of June, 2000 ("Effective Date") by and between POWER INTEGRATIONS, INC., a corporation duly organized and existing under the laws of the State of Delaware, U.S.A., having its principal place of business at 477 North Mathilda Avenue, Sunnyvale, California 94086 ("PI"), and

MATSUSHITA ELECTRONICS CORPORATION, a corporation duly organized and existing under the laws of Japan, by and through its Semiconductor Company having its principal place of business at 1 Kotariyakemachi, Nagaokakyo, Kyoto, Japan ("MEC").

RECITALS

- PI is the owner and developer of certain integrated circuit process technologies required to A. manufacture high voltage integrated circuits.
- PI has no wafer fabrication facility and desires to obtain a cost competitive foundry to manufacture wafers for PI, in order to provide a source for the wafers PI requires, and to assure a long term supply of wafers.
- MEC has wafer fabrication facilities in Japan and elsewhere and desires full utilization and efficient operation of its wafer fabrication facilities.
- MEC and PI desire to enhance the types of product available for sale by each of them through complementary and cooperative product development activity.
- PI and MEC desire that PI license MEC to manufacture wafers for certain integrated circuits, designed by either PI or MEC, using PI process technology, for sale to PI and for sale by MEC as finished products in certain geographic markets on the terms set forth in this Agreement.

AGREEMENT

PI and MEC, intending to be legally bound, hereby agree as follows:

ARTICLE I

DEFINITIONS

For the purposes of this Agreement, the following terms shall have the following meanings:

- "Asian Territory" means the People's Republic of China, Republic of Korea, Democratic People's Republic of Korea, Republic of China, Hong Kong, Mongolia, Philippines, Maldives, Malaysia, Singapore, Indonesia, Thailand, Vietnam, Laos, Kamp, Myanmar (Burma), Nepal, Bhutan, India, Pakistan, Afghanistan, Bangladesh, Srilanka, Brunei, and former Soviet Union.
- "Asian Company" means a corporation organized and existing under the laws of any country in the Asian Territory and operating in such country.

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- "Baseline Process" means (a) the specific n-channel power technology (nominally 400V) of PI and (b) extensions of the foregoing to higher voltages, that is more fully described in Appendix A attached to this Agreement, and does not include PI's p-channel process technology and (c) PI's technology, developed during the term of the Agreement, necessary to manufacture high voltage nchannel devices with MOS structure including, but not limited to, MOSFET, IGBT and MCT. Reference to the Baseline Process covers the process, manufacturing method and device structures relevant to (a), (b) and (c) above.
- "Confidential Information" means information relating to the subject matter of this Agreement which is regarded as confidential or proprietary by one party or the other; information received as a consequence of the rendering or receiving of technical assistance under this Agreement and/or the Prior License Agreement; information transferred during meetings between the parties relating to this Agreement and/or the Prior License Agreement which is owned or controlled by either party and which relates to its past, present or future activities with respect to the subject matter of this Agreement if such information is disclosed by one of the parties to the other party in written, graphic, model or other tangible form or in the form of a computer program or in a machine readable medium or any derivation thereof and is designated in writing as confidential by an appropriate legend, together with the name of the party so disclosing it, or, if such information is disclosed orally, which is identified at the time of oral disclosure as confidential and which is reduced to written, graphic, model, or other tangible form, marked as confidential and delivered by the disclosing party within thirty (30) days after such oral disclosure.
- "Japanese Company" means a corporation organized and existing under the laws of Japan and operating in Japan, other than a Subsidiary of a corporation organized and existing under the laws of any other country.
- "Mask Work" and "Semiconductor Chip Product" are defined as those terms are defined in Section 901 of the Semiconductor Chip Protection Act, Title 17, United States Code.
- "Matsushita Group" means MEC, MEI and their respective wholly owned subsidiaries and their respective subsidiaries in which MEC or MEI owns, directly or indirectly, more than fifty percent (50%) of the stock interest, or the maximum percentage of the stock interest that a foreign investor may own, if equal to or less than fifty percent (50%), pursuant to local laws and regulations of any country, as of the Effective Date. (Further, from time to time during the term of the Agreement, the definition of "Matsushita Group" shall be extended to include certain corporations or entities, based upon the request of MEC and the written approval by PL) It is explicitly understood by the parties that Matsushita Electric Works ("MEW") and all of its subsidiaries, in which MEW owns, directly or indirectly, more than fifty percent (50%) of the stock interest, or the maximum percentage of the stock interest that a foreign investor may own, if equal to or less than fifty percent (50%), pursuant to local laws and regulations of any country, as of the Effective Date, shall be included in the definition of "Matsushita Group".
- "MEC Product" means any and every Semiconductor Chip Product designed and released to production by MEC prior to and during the term of this Agreement, incorporating or utilizing at least one of (i) the Baseline Process; (ii) any Update to the Baseline Process made by PI or MEC; and (iii) any PI Patents; provided, however, that any MEC derivative of a PI Product will be deemed to be a MEC Product only if it is "substantially different in functionality" (as defined below) from the PI Product from which it was derived.

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- "PI Product" means any and every Semiconductor Chip Product designed and released to production by PI prior to and during the term of this Agreement, utilizing at least one of (i) the Baseline Process; (ii) any Update to the Baseline Process made by PI or MEC, and (iii) any PI Patents; provided, however, that any PI derivative of a MEC Product will be deemed to be a PI Product only if it is "substantially different in functionality" (as defined below) from the MEC Product from which it was derived.
- "Substantially different in functionality" means that at least 50% of the functional blocks of the derivative circuit are different from the functional blocks of the circuit (the "original circuit") from which the derivative circuit is derived; provided, however, that derivative circuits with only some or all of the following changes will be deemed not to be substantially different in functionality from the original circuits from which they were derived: changes in values of data sheet parameters such as breakdown voltage, RDSON, minimum pulsewidth, dynamic current range, frequency, and current limit; the addition or deletion of features such as latched shutdown and auto restart; and/or making parameters such as frequency or current limit externally programmable.
- "Product" without further qualification means, collectively, PI Product and/or MEC Product.
 - "Restricted Product" means any Product covered by the Restricted Patents.
 - "Net Sales" shall have the meaning provided in Section 5.3 below. 1.13
- "Patents" means letters patent, utility models, rights and privileges to or under letters patent and utility models in existence prior to the expiration or earlier termination of this Agreement, to the extent they relate to the Baseline Process or the design or manufacture of Products made on the Baseline Process or any Updates to the Baseline Process. "Patents" also means such letters patent, utility models, rights and privileges to or under letters patent and utility models that come into existence after the expiration or earlier termination of this Agreement if the same (i) issue on patent applications filed before the expiration or earlier termination of this Agreement, (ii) cover a PI Product (if such letters patent or utility model is owned by MEC) or cover an MEC Product (if such letters patent or utility model is owned by PI) and, (iii) such PI Product or MEC Product, as the case may be, incorporates or is made using Baseline Process Confidential Information disclosed under this Agreement.
- "PI's Patents" means Patents owned or controlled by PI during the term of this Agreement, with respect to which and to the extent to which, and subject to the conditions under which, PI shall have the right to grant licenses, rights and privileges to licensees during the term of this Agreement; it does not include, however, Patents with respect to which a license cannot be granted excepting pursuant to an agreement which requires the payment to a third party of royalties or other consideration measured by the use made of such Patents, unless MEC requests licenses under such Patents and agrees in writing to assume its fair share of such royalties or other consideration. PI represents and warrants that a list of all PI's Patents as of the date of this Agreement is set forth in Appendix B attached hereto.
- "Restricted Patents" means all PI Patents relating to Semiconductor circuit design or system level architectures issued or first applied for after January 1, 1994, other than PI Patents relating solely to the Baseline Process and Updates to the Baseline Process such as improvements to high voltage

device structures and improvements to semiconductor processing.

- (d) "MEC's Patents" means Patents owned or controlled by MEC during the term of this Agreement, with respect to which and to the extent to which, and subject to the conditions under which, MEC shall have the right to grant licenses, rights and privileges to licensees during the term of this Agreement; it does not include, however, Patents with respect to which a license cannot be granted excepting pursuant to an agreement which requires the payment to a third party of royalties or other consideration measured by the use made of such Patents, unless PI requests licenses under such Patents and agrees in writing to assume its fair share of such royalties or other consideration. MEC represents and warrants that a list of all MEC's Patents as of the date of this Agreement is set forth in Appendix C attached hereto.
- 1.15 "Subsidiary" of a company means a corporation or other legal entity (i) the majority of whose shares or other securities entitled to vote for election of directors (or other managing authority) is now or hereafter controlled by such company either directly or indirectly; or (ii) which does not have outstanding shares or securities but the majority of whose ownership interest representing the right to manage such corporation or other legal entity is now or hereafter owned and controlled by such company either directly or indirectly; but any such corporation or other legal entity shall be deemed to be a Subsidiary of such company only as long as such control or ownership and control exists.

1.16 "Update" shall mean:

- (a) with respect to a Product, a modification or addition made during the term of this Agreement to effect a cost improvement or to correct the design or to improve the specific Product to meet the specifications of such Product or, if no specifications are set forth, to meet data sheet specifications; and
- (b) with respect to the Baseline Process, any modification or change, during the term of this Agreement, to the Baseline Process, as defined in Section 1.3 of this Agreement, which improves or increases the efficiency, speed or yield of the Baseline Process.

Both parties hereby understand that the Updates shall include any and all modifications or changes to materials covered by copyrights and to Mask Works, in connection with the Products or Baseline Process.

- 1.17 "Wafers" means silicon wafers for Products.
- 1.18 "Work" means all works of authorship as defined in Sections 101, 102 and 103 of the Copyright Act, Title 17, United States Code.
- 1.19 "Prior License Agreement" means that Technology License Agreement entered into between MEC and PI, effective as of June 29, 1990, as amended on June 29, 1995 and as again amended on April 1, 1997.
- 1.20 "Foundry Agreement" means the Wafer Foundry Agreement signed by the parties on the same date this Agreement is signed.
 - 1.21 MEI means MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD., a corporation that

owns over fifty percent (50%) of the voting stock of MEC and is duly organized under the laws of Japan, having its principal place of business at Twin 21 National Tower, 1-61 Shiromi 2 Chome, Chuo-ku, Osaka 540-0001 Japan.

ARTICLE II

TRANSFER OF INFORMATION

- 2.1 Information Transfer. MEC and PI shall disclose and provide to each other any and all available and unrestricted information reasonably necessary in order for the other party to obtain the full benefit of the licenses granted hereunder.
- 2.2 <u>Update Information Transfer.</u> During the term of this Agreement, each party shall disclose and provide to the other any Updates which it develops regarding a Product or the Baseline Process as soon as practical but not longer than (2) months after the Update has been qualified for production.
- 2.3 <u>Documentation</u>. Documentation furnished hereunder by MEC and PI has been, or will be, prepared and compiled with reasonable care. The liability of the party providing documentation is limited to replacing such documentation, free from the error or deficiency in question, with reasonable promptness after notice thereof from the receiving party, at no additional charge to the receiving party.
- 2.4 Periodic Exchange of Information. Both parties hereby agree that they will have periodic meetings for the exchange of information by and between the parties' technical representatives with respect to the current and future product development and application which either party is separately performing in the field of the Product and Baseline Process. In addition, PI will permit one employee of MEC to remain onsite at PI's principal facility in Sunnyvale, California on a full time basis or such other basis as MEC desires and will provide such MEC employee with office furniture and fixtures, access to designated PI photocopiers and fax machines and telephone services. All costs and expenses of such employee, including the salary of such employee and all telephone toll charges while in the PI facility, will be borne by MEC.

The parties hereby confirm that any information transferred even by the informal meetings and other communications by and between the parties' technical representatives shall fall within the scope of the Confidential Information in the event such information satisfies the definition thereof as contemplated in Section 1.4.

ARTICLE III

CONFIDENTIAL INFORMATION

3.1 Confidentiality Obligation. Each party agrees that the Confidential Information of the other party which it receives pursuant to this Agreement or the Prior License Agreement is received only for its own use and only to the extent provided in this Agreement and the Prior License Agreement, respectively. Each party agrees to keep such Confidential Information that is (a) technical information relating to the Baseline Process and its Updates, and (b) primarily useful in design or manufacture of Products, confidential for a period extending for twenty (20) years after the expiration of this Agreement; and to keep all other Confidential Information confidential for a period extending for ten (10) years after the expiration of this Agreement.

- 3.2 Third Party Services. Either party may disclose Confidential Information of the other party to one or more third parties for the sole purpose and to the extent reasonably necessary to have such third parties provide the disclosing party with foundry, assembly and testing services relating to Semiconductor Chip Products in accordance with the terms of the licenses set forth in Sections 4.1 and 4.2; provided that such disclosures shall be made under written terms and conditions which protect the confidentiality of the disclosed information upon the terms, and for a period, not less restrictive than those contained in this Agreement.
- 3.3 Confidentiality Exception. Notwithstanding the provisions of Section 3.1, nothing received by the parties hereunder shall be construed as Confidential Information which prior hereto, or during the term of this Agreement, is:
- (a) published or otherwise made available to the public other than by a breach of this Agreement by such party hereto, or
- (b) rightfully received by one party hereto from an independent third party without restrictions on disclosure, or
- (c) approved in writing for release by the party designating the information as Confidential Information, or
- (d) except as otherwise provided in Section 3.5 below, known to or independently developed by the party receiving the Confidential Information without reference to such Confidential Information, or
- (e) disclosed within a patent application, the subject matter of which patent application belongs to the receiving party and only with the prior written approval of the disclosing party.

In the case that the receiving party intends to disclose Confidential Information under the exceptions (a), (b), or (d) above, the receiving party must first give the disclosing party notice (30) thirty days prior to such a disclosure.

- 3.4 Other Disclosure. Neither party shall be liable for disclosure of any Confidential Information if such disclosure is:
- (a) In response to a valid order of a court or other government body or any political subdivision thereof; provided, however, that the receiving party shall first immediately notify the other party of such order so as to allow the other party sufficient time to oppose the order and to seek to obtain a protective order requiring that the Confidential Information so disclosed be used only for the purpose for which such protective order is issued; or
 - (b) otherwise required by law.
- 3.5 Information Already Known. If a party receives information that the disclosing party is treating as Confidential Information and which is already known to the receiving party, such information shall nonetheless be Confidential Information for the purposes of this Agreement unless the receiving party demonstrates by reasonable evidence within a reasonable time after the information is disclosed that such information was already known to it before it was disclosed by the disclosing party.

ARTICLE IV

RIGHTS AND LICENSES

4.1 PI Licenses.

- (a) Subject to all the terms and conditions of this Agreement, PI hereby grants to MEC, for the term of this Agreement, a nontransferable, non-assignable right and license to use PI's Confidential Information transferred hereunder or under the Prior License Agreement relating to Products, the Baseline Process and Updates, including all such information designated as proprietary or confidential:
 - (i) to design MEC Products;
 - (ii) to improve and make derivatives of PI Products;
 - (iii) to make Wafers and Products at manufacturing facilities of MEC or MEC's
- Subsidiaries;
- (iv) to have Wafers and/or Products manufactured, assembled or tested solely for MEC, provided that
 - the right granted in this Section 4.1(a)(iv) shall not broaden the scope of any license granted to MEC under this Agreement,
 - (2) PI gives its written approval in advance for any such manufacture, assembly or test, which approval shall not be unreasonably withheld,
 - (3) MEC shall pay, for such Wafers and Products, the royalty due under this Agreement for Wafers and Products, respectively,
 - (4) the party performing such manufacture, assembly or test agrees in writing to all terms and conditions of this Agreement relating to intellectual property rights and licenses, and territorial and Restricted Product restrictions, and;
 - (5) MEC shall be the insurer and guarantor of such party's full observance of such terms and conditions;
 - (v) to use, sell, lease or otherwise dispose of:
 - (1) Products to the Matsushita Group worldwide;
 - (2) Products to any and all companies established or to be established under the laws of Japan;
 - Products to any and all Subsidiaries of Japanese Companies in the Asian Territory;

- (4) Products other than Restricted Products to Asian Companies in the Asian Territory; and
- (vi) to sell Wafers and Products to PI.

This license will be exclusive to the extent provided in Section 4.1(e) below; otherwise it is nonexclusive.

- (b) Subject to all the terms and conditions of this Agreement, PI hereby grants to MEC, for the term of this Agreement, a nontransferable, non-assignable, indivisible right and license under the PI Patents:
 - (i) to design MEC Products;
 - (ii) to improve and make derivatives of PI Products;
 - (iii) make Wafers and Products at manufacturing facilities of MEC or MEC's
- Subsidiaries;
- (iv) to have Wafers and/or Products manufactured, assembled or tested solely for MEC, provided that
 - the right granted in this Section 4.1(b)(iv) shall not broaden the scope of any license granted to MEC under this Agreement,
 - (2) PI gives its written approval in advance of any such manufacture, assembly or test, which approval shall not be unreasonably withheld,
 - (3) MEC shall pay, for such Wafers and Products, the royalty due under this Agreement for Wafers and Products, respectively,
 - (4) the party performing such manufacture, assembly or test agrees in writing to all terms and conditions of this Agreement relating to intellectual property rights and licenses, and territorial and Restricted Product restrictions, and;
 - (5) MEC shall be the insurer and guarantor of such party's full observance of such terms and conditions;
 - (v) to use, sell, lease or otherwise dispose of:
 - (1) Products to the Matsushita Group worldwide;
 - (2) Products to any and all companies established or to be established under the laws of Japan;
 - Products to any and all Subsidiaries of Japanese Companies in the Asian Territory;

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- Products other than Restricted Products to Asian Companies in the Asian Territory; and
- (vi) to sell Wafers and Products to Pl.

This license will be exclusive to the extent provided in Section 4.1(e) below; otherwise it is nonexclusive.

- (c) MEC will not sell, lease or otherwise dispose of Products to any companies established under the laws of countries other than Japan, whether through the international procurement offices of such companies or otherwise unless, for Products other than Restricted Products, MEC:
 - (i) is advised by the customer that; and
 - (ii) has a reasonable basis to believe that, and
 - (iii) does actually believe that

the final destination of such Products is an Asian Company in the Asian Territory.

- (d) Notwithstanding anything to the contrary contained herein, in case Japanese Companies wish to procure Products from MEC outside the territories where MEC is allowed to sell Products under this Agreement and PI is unable to satisfy such customer's Product quality and volume requirements, both parties shall negotiate the terms and conditions under which MEC shall be entitled to supply Products other than Restricted Products to such customers.
- (e) During the term of this Agreement PI will not grant to any companies established or to be established under the laws of Japan and any Subsidiaries of Japanese Companies worldwide, other than MEC, a whole or any part of the rights and licenses which MEC is granted hereunder, including, but not limited to, the right to use the Baseline Process, except to provide for production wafers, parts or other services solely for PI. Should MEC fail to comply with the terms of this Agreement in any material respect, PI will be entitled, subject to advance written notice to MEC and consultation with MEC, in case such failure should not be cured within sixty (60) days after PI's written notice, to grant any such rights and licenses to other companies established or to be established under the laws of Japan, without any infringement of MEC's proprietary rights.
- (f) MEC shall not have the right to sell, lease or otherwise dispose of Wafers or Products as die, wafers or packaged units for purposes of resale by any third party as Semiconductor Chip Products under any third party's own brand label or marking.
- (g) MEC and any other licensees under this Agreement shall not have any rights under this Agreement or the licenses granted herein to use any Confidential Information of PI or Updates of PI delivered to MEC on or after June 29, 1995, or any PI Patents first owned or controlled by PI on or after June 29, 1995, to design, develop, manufacture, use, sell, lease or otherwise dispose of any products for any application for energizing light.
- (h) Although MEC's Subsidiaries are not otherwise granted licenses under this Agreement, any MEC Subsidiary outside Iapan that has manufactured or assembled Products as permitted by this

Section 4.1 may make, sell, lease or otherwise dispose of such Products to the same extent MEC is licensed to do so under Sections 4.1 and 4.3 of this Agreement. MEC shall assure that each MEC Subsidiary that makes, sells, leases or otherwise disposes of Products pursuant to this Section 4.1(h) does so in compliance with all applicable provisions of this Agreement. MEC shall be responsible for any noncompliance by any MEC Subsidiary to the same extent as if MEC itself were not in compliance.

4.2 MEC License.

- (a) Subject to all the terms and conditions of this Agreement, MEC hereby grants to PI a perpetual, paid-up, worldwide, nonexclusive, non-assignable (except as otherwise provided in Section 9.4 below), nontransferable right and license to use MEC's Confidential Information transferred hereunder or under the Prior License Agreement relating to Products, the Baseline Process, and Updates, including all such information designated as proprietary or confidential, to design, make and have made Products, other than MEC Products, and to use, sell, lease or otherwise dispose of such Products.
- (b) Subject to all the terms and conditions of this Agreement, MEC hereby grants to PI a perpetual, paid-up, worldwide, nonexclusive, non-assignable (except as otherwise provided in Section 9.4 below), nontransferable, indivisible right and license under the MEC Patents to make, have made, use, sell, lease or otherwise dispose of Products, other than MEC Products.
- (c) Subject to all of the terms and conditions of this Agreement, MEC hereby grants to PI, for the term of this Agreement, a worldwide, nonexclusive, non-assignable (except as otherwise provided in Section 9.4 below), nontransferable right and license to use MEC's Confidential Information transferred hereunder or under the Prior License Agreement relating to Products, the Baseline Process, and Updates, including all such information designated as proprietary or confidential, to make and have any companies other than Japanese Companies make MEC Products and derivatives of MEC Products and to use, sell, lease or otherwise dispose of such MEC Products and derivatives of MEC Products worldwide.
- (d) Subject to all of the terms and conditions of this Agreement, MEC hereby grants to PI, for the term of this Agreement, a worldwide, nonexclusive, non-assignable (except as otherwise provided in Section 9.4 below), nontransferable, indivisible right and license under the MEC Patents to make, have any companies other than Japanese Companies make, use, sell, lease or otherwise dispose of MEC Products and derivatives of MEC Products.
- (e) PI shall not have any rights under this Agreement or the licenses granted herein to use any Confidential Information of MEC or Updates of MEC delivered to PI on or after June 29, 1995, to design, develop, manufacture, use, sell, lease or otherwise dispose of any products for any application for energizing light.
- (f) Although PI's Subsidiaries are not otherwise granted licenses under this Agreement, any PI Subsidiary outside Japan may design, make, sell, lease or otherwise dispose of Products to the same extent PI is licensed to do so under Sections 4.2 and 4.3 of this Agreement. PI shall assure that each PI Subsidiary that designs, makes, sells, leases or otherwise disposes of Products pursuant to this Section 4.2(f) does so in compliance with all applicable provisions of this Agreement. PI shall be responsible for any noncompliance by any PI Subsidiary to the same extent as if PI itself were not in compliance.

- 4.3 Copyright and Mask Work Licenses. Subject to all of the terms and conditions of this Agreement, MEC and PI each grant to the other nonexclusive, non-assignable (except as otherwise provided in Section 9.4 below), nontransferable, royalty-free licenses under its copyrights and Mask Works to make reproductions in copies and to distribute, import, export and sell Products and to distribute such copies and Products to the extent necessary to manufacture, use, lease, sell or otherwise dispose of Products as otherwise permitted by this Article IV; provided, however, that each party shall take the necessary actions, including but not limited to the affixing of copyright and Mask Work notices, to protect the copyrights and Mask Works of the other party.
- 4.4 Other Rights Reserved. Anything in this Agreement to the contrary notwithstanding, no license is herein granted, and no act or acts hereunder shall be construed as or result in conveying any license or right to either party or to any third party expressly or by implication, estoppel or otherwise, excepting the licenses and rights expressly granted and agreed to be granted under Article IV of this Agreement.
- 4.5 Ownership. PI and MEC each hereby acknowledges and agrees that any Update made solely by either party under this Agreement shall be owned by the party making such Update and subject to the licenses granted herein; and that any Update made jointly by the parties (Joint Update) shall be owned solely by PI and subject to the licenses granted herein. MEC hereby agrees to assign to PI, and hereby does assign to PI, all its right, title and interest in and to all Joint Updates, including all intellectual property rights therein. Upon reasonable request by PI, MEC will execute all documents appropriate for PI to perfect its rights in Joint Inventions. Such documents shall include but not be limited to execution of assignments, patent applications and other documents. All Updates will be conclusively considered to have been either (a) made solely by PI or (b) made jointly by PI and MEC and, in either event, owned solely by PI; unless MEC promptly notifies PI in writing that such Update (i) was made without use of PI Confidential Information, (ii) has a substantial use other than for manufacturing, or for incorporation into, Products and (iii) is considered by MEC to be made solely by MEC.

ARTICLE V

COMPENSATION

5.1 Product Royalties Payable to PI.

(a) MEC shall pay PI royalties, in Japanese yen on all units of Product made by MEC and MEC's Subsidiaries and used, leased, sold or otherwise disposed of by MEC and MEC's Subsidiaries, other than to PI, at the following rates based upon the Net Sales of such Products:

Royalty Rate

During the term of this Agreement

Five percent (5.0%) of the Net

Sales

For four years after the term of this Agreement.

Three and one-half percent (3.5%) of the Net Sales

(b) Product shall be considered as used, sold, leased or disposed of, as the case may be, when billed out, delivered, shipped or mailed to a customer or lessee, or when first used or first set aside

for future use by the Matsushita Group, whichever shall first occur. Product scrapped and destroyed shall not be considered as Product manufactured under this Agreement.

5.2 Product Royalties Payable to MEC.

(a) PI shall pay MEC royalties, in Japanese yen, on all units of MEC Product used, leased, sold or otherwise disposed of by PI and PI's Subsidiaries, other than to MEC, at the following rates based upon the Net Sales of such MEC Products:

Royalty Rate

During the term of this Agreement

Five percent (5.0%) of the Net

For four years after the term of this Agreement.

Three and one-half percent (3.5%) of the Net Sales

(b) MEC Product shall be considered as used, sold, leased or disposed of, as the case may be, when billed out, delivered, shipped or mailed to a customer or lessee, or when first used or first set aside for future use by PI or any of its Subsidiaries, whichever shall first occur. MEC Product scrapped and destroyed shall not be considered as Product manufactured under this Agreement.

5.3 Determination of "Net Sales".

- (a) "Net Sales" of Product shall be determined as follows:
- (i) In respect of Product in the form of packaged, tested product or as die or wafers sold in normal, arm's length, commercial transactions between parties which are not in affiliation, the Net Sales shall be the aggregate of the genuine selling prices at which customers are billed in the usual course of business for such Product, without any deductions or credits other than those determined in accordance with Section 5.3(b), if any.
- (ii) In respect to Product in the form of packaged, tested product or as die or wafers used, leased or otherwise disposed of, or sold otherwise than in normal, arm's length, commercial transactions between parties which are not in affiliation, the Net Sales shall be the aggregate of the genuine selling prices of the same quantities of similar or substantially similar Product which are sold in normal, arm's length, commercial transactions between parties which are not in affiliation, or, if there be no similar or substantially similar Product so sold, then the fair market value thereof, without any deductions other than those determined in accordance with Section 5.3(b), if any.
- (b) In determining its Net Sales, a party may deduct from the genuine selling price, equivalent thereof or fair market value, as the case may be, of Product, the amount of any sales, excise or other taxes, as well as any packing, freight and transportation, payable by the party in respect of any such Product to the extent that any such amount is included in the genuine selling price, equivalent thereof or fair market value, as the case may be, of such Product and is billed separately by the party to its customers. Each party shall be allowed to take as a credit in determining Net Sales, (i) customary trade and quantity discounts actually allowed, and (ii) allowances or credits to customers on account of rejections or returns.

(c) MEC warrants that sales of the Products from MEC to any company in the Matsushita Group shall be priced as though such company was a third party customer and that the selling prices between MEC and such company will be determined in normal arm's length transaction.

5.4 Certification of Royalties: Audit Rights.

- (a) Within two (2) months after, and as of March 31, June 30, September 30 and December 31 of each year during the period MEC is obligated to pay royalties pursuant to this Agreement, MEC shall furnish PI with a written statement certified by an officer of MEC specifying (i) the number of units of each kind of Product used, sold, leased, or otherwise disposed of by MEC during the quarter ending such March 31, June 30, September 30 and December 31, and with respect to which compensation is payable under this Agreement, (ii) the aggregate of the Net Sales of each such kind of such Product, (iii) the total net compensation payable for reach such kind of such Product pursuant to this Agreement. At the time of furnishing such statements, MEC shall also make the payments prescribed therefor in Section 5.1.
- (b) Within two (2) months after, and as of, each March 31, June 30, September 30 and December 31 of each year during the period PI is obligated to pay royalties pursuant to this Agreement, PI shall furnish MEC with a written statement certified by an officer of PI specifying (i) the number of units of each kind of MEC Product under PI Label used, sold, leased, or otherwise disposed of by PI during the quarter ending such March 31, June 30, September 30 and December 31, and with respect to which compensation is payable under this Agreement, (ii) the aggregate of the Net Sales of each such kind of such Product, (iii) the total net compensation payable for each such kind of such Product pursuant to this Agreement. At the time of furnishing such statements, PI shall also make the payments prescribed therefor in Section 5.2.
- (c) A similar statement shall be rendered and payment made within two (2) months after; and as of, the date of any termination of this Agreement covering the period from the end of that covered by the last preceding statement to such date of termination. Such statement and payment shall include all Product manufactured prior to such date of termination but not covered by prior statements and payments, which Product shall be considered as sold as of such date of termination.
- (d) In the event that any payments under this Agreement by either party are taxable by the government of Japan/United States, whichever applicable, and such tax is required to be withheld from the payment to the other party, the party to make the payment shall deduct such amount from the payment to the receiving party to the extent permitted under U.S./Japan Income Tax Convention and shall pay such tax on behalf of the receiving party. In such event, the party to make payment shall obtain and transmit to the receiving party the proper tax receipt evidencing the payment of such tax.
- (c) Each party shall keep, notwithstanding any termination or the expiration of this Agreement, true and accurate records, files and books of account containing all the data reasonably required for the full computation and verification of the amounts to be paid and the information to be given in the statements provided hereunder. Each party shall, during usual business hours, permit certified public accountants designated by the other party, at the requesting party's expense and by prior arrangement, and not more than once a year, adequately to inspect the same for the sole purpose of determining the amounts payable pursuant to this Article V. Such record need not be retained by each party beyond three (3) years from the date on which the royalties because the same for th

- (f) MEC shall keep, notwithstanding any termination or the expiration of this Agreement, true and accurate records, files and books of account containing all the data reasonably required for the verification of compliance of the territorial restrictions of the sale of MEC Products and Restricted Products by MEC for a period of three (3) years from such sale. MEC guarantees that MEI shall keep true and accurate records, files and books of account, of the same nature, under the same conditions, and for the same period, all as set forth in the foregoing sentence. Upon PI's or MEC's determination that a violation of said territorial restrictions has taken place, MEC shall provide to PI the relevant documents, including those of MEI, identifying the likely source and MEC's plan to immediately cure such violation and prevent further violations.
- PI and MEC will each exert reasonable efforts to assert their rights under law to protect the Baseline Process against infringement by others.
- Quarterly Fee Payable to PI. Within ten (10) days after each of the following dates: July 14, September 30 and December 31 of calendar 2000, March 31, June 30, September 30 and December 31 of calendar of 2001, and March 31 of calendar 2002, MEC shall pay a non-refundable, non-deductible fee to PI in the amount of U.S. \$50,000.

ARTICLE VI

REPRESENTATIONS AND WARRANTIES

Representations and Warranties. PI and MEC each represents that: it has the right to grant the rights and licenses granted under this Agreement, to transfer the information transferred under this Agreement, and to provide the technical assistance called for; that its execution, delivery and performance of this Agreement have been duly authorized by its Board of Directors and any other necessary corporate action; and that the terms and conditions of this Agreement do not violate its Articles of Incorporation or Bylaws (or their equivalent) and do not conflict with any other material agreement to which it is a party or by which it is bound.

6.2 Certain Disclaimers.

(a) Nothing contained in this Agreement shall be construed as (i) a warranty or representation by either party as to the validity or scope of any Patents; or (ii) a warranty or representation that any manufacture, sale, lease, use, or other disposition hereunder will be free from infringement of Patents other than those under which, and to the extent to which, licenses are granted hereunder, or (iii) a warranty or representation that any product can be manufactured without infringing the patents or other proprietary rights of third parties; or (iv) an agreement to bring or prosecute actions or suits against third parties for infringement or conferring any right to bring or prosecute actions or suits against third parties for infringement; or (v) conferring any right to use in advertising, publicity, or otherwise, any trademark, trade name or name or any contraction, abbreviation or simulation thereof, of either party (provided, however, that PI may identify MEC as a foundry and second source for PI's products); or (vi) conferring by implication, estoppel or otherwise upon any party licensed hereunder, any license or other right under any Patent or other right except the licenses and rights expressly granted hereunder; or (vii) a warranty that one party shall be able to make successfully any products using the other party's technical information; or (viii) that the receiving party will be able to use the technology without infringing patents or other rights of third parties.

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(b) EXCEPT AS OTHERWISE EXPRESSLY STATED IN THIS AGREEMENT, NEITHER PARTY MAKES ANY WARRANTY AS TO THE ACCURACY, SUFFICIENCY OR SUITABILITY FOR THE OTHER PARTY'S USE OF ANY TECHNICAL INFORMATION OR ASSISTANCE PROVIDED HEREUNDER; NOR FOR THE QUALITY OF ANY PRODUCT OR PROCESS MADE HEREUNDER...

ARTICLE VII

EXPORT CONTROL

7.1 Technical Data.

- (a) Each party hereby assures the other that it will not, without prior authorization, if required, of the Office of Export Administration, U.S. Department of Commerce, 14th and Constitution Ave., N.W., Washington, D.C. 20230, export or re-export (as defined in Section 779.1 (b)(c) of the Export Administration Regulations "Regulations" and any amendments thereto) the technical data covered thereby. PI shall inform MEC in writing of the technical data restricted under such Regulations as well as its restricted country group upon PI's disclosure or provision of technical information.
- (b) Other Restrictions. In exercising its rights under this Agreement, each party agrees to comply strictly and fully with all export controls imposed on Products, by any country or organization or nations within whose jurisdiction each party operates or does business. Each party agrees not to export or permit export of Products or any related technical data or any direct product of any related technical data, without complying with the export control laws in the relevant jurisdiction.
- (c) Each party shall not export the Product to any country designated as "Countries against which the sanctions should be taken" by certain resolutions of the Security Council of the United Nations regarding the sanctions against certain countries, as long as such resolutions remain valid and effective. For purposes of this Agreement, any re-export in violation of such resolutions by a customer of either MEC or PI will not be considered to be an export in violation of such resolutions by MEC or PI, as the case may be, so long as MEC or PI, as the case may be, did not knowingly participate in such re-export.
- (d) During and after the term of this Agreement, to the extent the same practically is within its control, each party shall not sell, lease or otherwise dispose of, directly or indirectly, any Product to customers whom such party knows intend to make use of the Product for Military Purposes (defined herein below). For the purpose of this Agreement, "Military Purposes" means the design, development, manufacture or use of any weapons, including without limitation nuclear weapons, biological weapons, chemical weapons and missiles.
- (e) In the event either party violates the provision of this Section 7, the non-violating party shall have the right to require reasonable written assurances from the violating party that such violation. whether or not past incidents of violation can be cured, will not continue in the future, and if the violating party does not deliver such assurances to the non-violating party promptly after its request, the nonviolating party may suspend the performance of its obligations under this Agreement until such time as it receives such assurances, without any prejudice to the rights and remedies which the non-violating party may have under this Agreement. In the event that such assurance is not delivered to the non-violating party within three (3) months after request, the non-violating party shall have the right to terminate

forthwith, without any prejudice to the rights and remedies which it may have hereunder, this Agreement, by giving a written notice to the violating party.

ARTICLE VIII

EXPIRATION AND TERMINATION

Term of Agreement. This Agreement shall become effective as of the Effective Date and shall continue in full force and effect, unless sooner terminated as elsewhere provided in this Agreement, until the fifth (5th) anniversary of the Effective Date, at which time it shall expire.

8.2 Renewal.

If this Agreement has not earlier terminated, the parties agree to negotiate in good faith, beginning on the fourth (4th) anniversary of the Effective Date of this Agreement, for the continuation on mutually agreeable terms of the licenses, royalty arrangements, manufacturing commitments and other terms and conditions included in this Agreement and the Foundry Agreement.

8.3 Termination.

- (a) Except as otherwise set forth in this section, if either party shall at any time default, without any material causative fault on the part of the other party, by failing to substantially perform any material provision of this Agreement or the Foundry Agreement, and such default shall not be cured within sixty (60) days after written notice to it from the other party specifying the nature of the default, the non-defaulting party shall have the right to terminate this Agreement and the licenses it has granted under the Prior License Agreement, at any time thereafter by giving written notice of termination to the other party, and upon the giving of such notice of termination this Agreement and such licenses shall terminate immediately. Subject to Section 8.5(b)(ii), the licenses and rights granted to the non-defaulting party under this Agreement shall survive such termination. The party receiving notice shall have the right to cure any such default up to the date of termination. In the event either party defaults by failing to substantially perform any material provision of this Agreement or the Foundry Agreement, the other party shall have the right to suspend further transfers of information, including Updates, by it and shall not be obligated to resume such transfers until such default has been cured.
- (b) Each party shall have the right to terminate this Agreement and the licenses it has granted under the Prior License Agreement, by giving written notice of termination to the other at any time upon or after, (i) the filing by the other party of a petition in bankruptcy or insolvency, or (ii) upon or after the filing of any voluntary or involuntary petition or answer seeking reorganization, readjustment or arrangement of the other party's business under any law relating to bankruptcy or insolvency, or (iii) upon or after the appointment of a receiver for all or substantially all of its property, or (iv) upon or after the making by the other party of any assignment or attempted assignment for the benefit of creditors, or (v) upon or after the institution of any proceedings for the liquidation or winding up of the other party's business or for the termination of its corporate charter; and this Agreement and such licenses shall terminate automatically on the thirtieth (30th) day after such notice of termination is given, without further notice, demand or opportunity to cure. Subject to Section 8.5(b)(ii), the licenses and rights granted to the non-defaulting party under this Agreement shall survive such termination.

(c) The following articles and sections shall survive any expiration or termination of this Agreement: Articles III, V, VI, VII, and Sections 9.11, 9.12, 9.13 and 9.14.

8.4 Consequences of Expiration.

- (a) Upon expiration of this Agreement, all rights and obligations of the parties hereunder shall cease and determine, except for rights and obligations which, by the terms of this Agreement, continue after expiration or earlier termination of this Agreement and except that the expiration of this Agreement shall not release either party from any of its obligations accrued hereunder prior to the time expiration becomes effective.
- (b) Without limiting the generality of the foregoing, upon expiration of this Agreement, the rights and licenses granted by the parties to each other for the term of this Agreement in Article IV hereof shall terminate immediately; provided, however, that:
- (i) subject to the continuing payment of royalties set forth in Section 5.1, MEC shall retain the licenses granted by PI under Article IV; and
- (ii) subject to the continuing payment of royalties set forth in Section 5.2, PI shall retain the licenses granted by MEC under Article IV.

If the royalty amounts set forth in this Section 8.4(b) are paid in full at the end of four (4) years after the expiration of this Agreement ("Additional Term"), all royalty obligations shall be deemed fully paid up.

Upon the expiration of the Additional Term, so long as a party has performed its respective obligations hereunder during such Additional Term, including payment of all royalties, the rights and licenses granted to such party under Article IV of the Agreement shall be fully paid-up and such party shall have free right to utilize any information furnished and rights granted under this Agreement on or before its expiration, without any further payments, subject to continuing confidentiality obligations as provided in Article III of this Agreement and compliance with the terms of the rights and licenses granted under Article IV of the Agreement, including, without limitation, the territorial and Restricted Product restrictions on such rights and licenses.

(c) Notwithstanding the final paragraph of Section 8.4(b), it is confirmed by the parties that, after the expiration of this Agreement, neither party shall be obligated to continue to furnish any information to the other party.

8.5 Consequences of Termination.

- (a) Upon termination of this Agreement, all rights and obligations of the parties hereunder shall cease and determine as from such date of termination, except for rights and obligations which, by the terms of this Agreement, continue after such termination and except that no termination of this Agreement shall release either party from any of its obligations accrued hereunder but not yet performed prior to the time such termination becomes effective.
 - (b) Notwithstanding the above Section 8.5(a);

- (i) in the event of termination of this Agreement pursuant to Section 8.3 above, the rights and licenses granted to the defaulting party under Article IV shall terminate upon such termination, provided, however, that the defaulting party shall retain the rights to manufacture, use, sell or otherwise dispose of the units of Products which have been ordered by its customers or any inventory of the Products at the time of termination subject to the royalty payment pursuant to Article V hereof.
- in the event of termination of this Agreement pursuant to Section 8.3, above, the rights and licenses granted to the non-defaulting party under Article IV of the Agreement shall become perpetual, fully paid-up and irrevocable upon payment of all royalties that would have been owed if such termination had not occurred.

ARTICLE IX

MISCELLANEOUS AND GENERAL PROVISIONS

- Alternate Sources. Subject to the terms of this Agreement, PI and MEC may act as alternate sources for the Products and advise their customers and distributors of each other's ability to do so. Except as otherwise expressly set forth in the Foundry Agreement, if at all, nothing in this Agreement or the Foundry Agreement shall be interpreted as requiring either party to manufacture specific products nor as requiring either party to act as an alternate source for the other.
- Publicity. PI and MEC shall agree on the content and release of a press announcement relating to the transactions contemplated by this Agreement and the Foundry Agreement. Neither party shall, however, except as, to the extent, and in the manner, required by law or regulation, disclose to any third party any of the specific terms or conditions, including payment terms, under which the transactions contemplated by this Agreement are to be carried out.
- Possible Future Cooperation. PI agrees to consider MEC for the license of other technology developed by PI in the future before licensing such future technology to other parties. However, nothing in this Agreement shall be interpreted as requiring the parties to enter into any future agreements.
 - 9.4 Successors and Assigns: No Assignment.
- (a) This Agreement, and rights and obligations herein, shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns, provided that except as set forth below neither party shall assign this Agreement or any of its rights hereunder without the prior written consent of the other Party.
- (b) Notwithstanding any other provision of the Agreement, PI may without the prior consent of MEC assign all of its rights under this Agreement to a purchaser of all or substantially all of PI's stock or assets or to a third party participating in a merger or other corporate reorganization in which PI is a constituent corporation. Within 180 days after such assignment, if the assignee is (i) a competitor of MEC, and (ii) of comparable size to MEC or larger, then either MEC or PI's assignee may elect to have this Agreement be deemed to have expired and to have the provisions of Section 8.4(b) take effect 180 days after written notice to the other party of such election.
 - (c) As a condition of any assignment of this Agreement or any of the rights granted

hereunder, any successor shall expressly assume in writing the performance of all terms and conditions of this Agreement to be performed by the assigning party including such party's obligations hereunder with respect to the protection of Confidential Information. The successor's name shall thereafter automatically be substituted for the name of the assigning party in this Agreement.

- No Rights to Marks, Etc. Except as provided in Section 9.2 above, nothing contained in this Agreement shall confer any rights to use in advertising, publicity, or otherwise, any trademarks, trade names, or any contraction, abbreviation or simulation thereof, of either party, provided such restriction shall not apply to identification numbers and descriptions of devices and software which are the subject matter of this Agreement.
 - 9.6 No Joint Venture. Nothing contained in this Agreement shall be construed as:
- (a) creating any partnership, joint venture or other similar relationship between PI and MEC; or
- (b) obligating either party to commercially produce or to continue to commercially produce, any solid state device of any type whatsoever, or any parts or components thereof (except as provided in the Foundry Agreement).
- Force Majeure. Anything contained in this Agreement to the contrary notwithstanding, the obligations of the parties hereto shall be subject to all laws, both present and future, of any government having jurisdiction over the parties hereto, and to orders, regulations, directions or requests of any such government, or any department, agency or corporation thereof, and to war, acts of public enemies, strikes or other labor disturbances, fires, floods, earthquakes, acts of God, or causes of like or different kind beyond the control of the parties and the parties hereto shall be excused from any failure to perform any obligation hereunder to the extent such failure is caused by any such law, order, regulation, direction, request or contingency, for the period such cause endures. Notwithstanding the foregoing, in the event any such cause delays either party's performance of any of its material obligations under this Agreement, the other party may suspend its performance hereunder for the period such delay continues and if any such cause renders impossible or delays for a period of more than six months either Party's performance of any of its material obligations under this Agreement, the other party may terminate this Agreement pursuant to Section 8.3, as if a material default had occurred hereunder and shall have the rights and remedies specified in Article VIII. The party whose performance is delayed on account of any such cause shall promptly notify the other party, and shall exert its best efforts to recommence performance as soon as possible.
- 9.8 Entire Agreement. This Agreement and the Foundry Agreement to be entered into along with this Agreement set forth the entire agreement and understanding between the parties as to the subject matter hereof and thereof and supersede all prior discussions, negotiations and agreements, written, oral or implied, between them in respect of the subject matter of this Agreement. None of the parties shall be bound by any conditions, definitions, warranties, understandings or representations with respect to such subject matter other than as expressly provided herein or therein or as duly set forth on or subsequent to the date hereof or thereof in writing and signed by a proper and duly authorized officer or representative of the party to be bound thereby.
 - 9.9 Remedies. Upon the breach by any party to this Agreement of any provision of this

Agreement or the Foundry Agreement, the non-breaching party shall have the right to pursue all available remedies at law or in equity it may elect, in order to obtain the benefits to have been provided pursuant to this Agreement, or to obtain adequate recourse or compensation in the event the same are not so provided.

- 9.10 Absence of Waivers. Failure or delay on the part of a party hereto to enforce any of the provisions of this Agreement or any rights with respect thereto, or to exercise any election provided for herein shall in no way be considered to be a waiver of such provisions, rights or elections or in any way affect the validity of this Agreement. Failure or delay on the part of a party to exercise any of the said provisions, rights or elections shall not preclude or prejudice such party from later enforcing or exercising the same or any other provisions, rights or elections which it may have under this Agreement.
- 9.11 Notices. All notices shall be given in writing either by personal delivery to the party to whom notice is given, or by a commercial overnight courier service, or by registered or certified mail, return receipt requested. The date upon which any such notice is so personally delivered, the date of confirmation of courier delivery, or if the notice is given by registered or certified mail the date of the return receipt, shall be deemed to be the date of such notice, irrespective of the date appearing therein.

If to PI:

POWER INTEGRATIONS, INC.

477 N. Mathilda Ave.

Sunnyvale, California 94086

Attn: President

If to MEC:

MATSUSHITA ELECTRONICS CORPORATION

1 Kotariyakemachi, Nagaokakyo,

Kyoto 617 JAPAN

Attn: Director, Discrete Device Division

- 9.12 Injunctive Relief. Each party agrees that its confidentiality obligations provided in this Agreement are necessary and reasonable in order to protect the disclosing party and its business, and each party expressly agrees that monetary damages would be inadequate to compensate the disclosing party for any breach by the receiving party of its covenants and agreements as to its confidentiality obligations set forth in this Agreement. Accordingly, notwithstanding Section 9.17, each party agrees and acknowledges that any such breach or threatened breach will cause irreparable injury to the disclosing party and that, in addition to any other remedies that may be available, in law, in equity or otherwise, the disclosing party shall be entitled to obtain injunctive relief against any breach, or threatened breach of such confidentiality obligations, or the continuation of any such breach, by the receiving party, without the necessity of proving actual damages or of posting bond.
- 9.13 Attorneys' Fees. In the event of any action, suit or proceeding, including arbitration, between the parties hereto, the prevailing party shall be entitled to recover its costs, including those for expert witnesses, and reasonable attorneys' fees therein.
- 9.14 <u>Headings</u>. All paragraph captions are for reference only and shall not be considered in construing this Agreement.
- 9.15 Severability. Any provision or provisions of this Agreement which in any way contravenes a law of any state or country which the Agreement is in effect shall, in such state or country

and to the extent of such contravention of local law, be deemed separable and shall not affect any other provision or provisions of this Agreement.

- 9.16 Governing Law. This Agreement and the rights and obligations of the parties hereunder shall be governed by, and construed in accordance with, the laws of the United States and the State of California as applied to agreements entered into and to be performed entirely within California between California residents without regard to conflict of laws principles.
- 9.17 Arbitration. Disputes arising out of or in connection with the validity, interpretation, application, or enforcement of this Agreement or the performance of either party will be discussed and settled amicably by good faith negotiations between PI and MEC. Any such disputes which cannot be settled amicably and by such good faith negotiations within sixty (60) days after written notice by one party to the other of such inability to amicably settle shall thereafter be settled by binding arbitration. The arbitration shall be conducted in English pursuant to the Rules of Arbitration of the International Chamber of Commerce, which shall be held in San Francisco, California. Any judgement or award rendered in these arbitrations may be entered and enforced by any court of competent jurisdiction and may include, when appropriate, equitable relief.
- 9.18 <u>Time of Essence</u>. Time is of the essence in the performance of each and every obligation of the parties under this Agreement.
- 9.19 Originals. This Agreement shall be executed in duplicate, each of which shall be an original, and shall be kept by PI and MEC, respectively.
- 9.20 Prior License Agreement. All intellectual property that was licensed under the terms and conditions of the Prior License Agreement remain licensed under this Agreement.

IN WITNESS WHEREOF, PI and MEC have caused this Agreement to be executed in their names by the duly authorized officers or representatives as of the date first above written.

POWER INTEGRATIONS, INC.

MATSUSHITA ELECTRONICS CORPORATION

Name:

Name:

Jusumu Kaike

Appendix B

PI's Patents

High Voltage MOS transistors	USA	4,811,075
	European (designated France, Germany, Great Britain, Italy, Netherlands, Sweden)	0295391
Regulated Flyback Converter with Spike Suppressing Coupled Inductors	USA	5,008,794
Self Powering Technique for Integrated Switched Mode Power Supply	USA	5,014,178
	Japan	2044690
Temperature-Compensated Integrated Circuit for Uniform Current Generation	USA	5,038,053
Pulse Width Modulator Control Circuit	USA	5,045,800
MOS Grated Bipolar Transistor	USA	5,072,268
	Japan	1937954
High Frequency Switched Mode Converter	USA	5,161,098
Low Cost High Frequency Switched Mode Converter & Method For Making Same	Taiwan	56268
Low Noise Voltage Regulator Using A Gated Single Ended Oscillator	USA	5,164,891
Below Ground Current Sensing with Current Input to Control Threshold	USA	5,245,526
Semiconductor Device w/ Improved Breakdown Voltage Characteristics	USA	5,258,636
Dual Threshold Differential Discriminator	USA	5,274,274
	European (designated	0562397

Confidential

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	France, Germany, Great Britain, Italy, Netherlands, Sweden)	
High Voltage Transistor	USA	5,274,259
Power MOSFET Safe Operating Area Current Limit Device	ing USA	5,282,107
	European (designated France, Germany, Great Britain, Italy, Netherlands, Sweden)	0585847
Linear Load Circuit to Control Switching Power Sup Under Minimum Load Conditions	plies USA	5,285,367
Switched Mode Power Supply Integrated Circuit with Start-up Self-Biasing	h USA	5,285,369
State-up State-Diasing	European (designated France, Germany, Italy, Netherlands, Sweden, UK)	0585788
High Voltage MOS Transistor With A Low On-Resis	stance USA	5,313,082
Three Terminal Switched Mode Power Supply Integr Circuit	rated USA	5,313,381
Chean	European (designated France, Germany, Italy, Netherlands, Sweden, UK)	0585789
Bi- Directional MOSFET Switch	USA	5,323,044
Method of Making High Voltage Transistor	USA	5,411,901
Power Factor Correction Pre-compensation Circuit	USA	5,461,303
Plastic Quad Packaged Switch with Mode Integrated Circuit Transformer Winding and Moldings for	USA	5,469,334
Confidential	58	

Transfor	rmer Coi	rc Pieces
TIGHSTO.		10 4 10000

Low-Cost High-Voltage Flyback Power Supply	USA	5,602,724
Coupled inductor power supply with reflected feedback regulation circuitry	USA	5,973,945
Two switch off-line switching converter	USA	5,982,639
Two switch off-line switching converter	USA	6,905,781

Appendix C

MEC's Patents

Title	Open No	Patent No	Patent No
	(Japan)	(Japan)	(USA)
Semiconductor	H04-107834	2523966	
Apparatus		0.0000	
Semiconductor	H04-107865	2633381	
Apparatus			
Semiconductor	H04-107866	2635433	
Apparatus			<u> </u>
Semiconductor	H04-107867	2599493	
Apparatus			<u> </u>
Semiconductor	H04-107868	2608974	
Apparatus			
Semiconductor	H04-107869	2608975	
Apparatus and		ļ	
igniter			
With it			<u> </u>
Semiconductor	H04-107870	2608976	
Apparatus			
Semiconductor	H04-107872	2608977	
Apparatus			
Semiconductor	H04-107877	2991753	
Apparatus and	}	•	
Manufacturing	ļ	· ·	
method			
Semiconductor	H04-107879	2599494	
Apparatus			
Semiconductor	H04-188768	2624373	
Apparatus			
Semiconductor	H04-225530	2885942	· ·
Apparatus			<u> </u>
Semiconductor	H04-225569	2678092	
Apparatus			
Constant Current	H04-18305	2808930	
Circuit			
Semiconductor	H10-290144		USP6069501
Apparatus			
Semiconductor	H11-145313		USP6043534
Apparatus			
Electro Luminescence	H11-162638		USP6005350
Drive Apparatus			1

PX 272

650V/1A, SPS 1-chip Process

C. K. Jeon*, J. J. Kim, Y. S. Choi, M. H. Kim, S. L. Kim, and H. S. Kang

Process R&D Group/NTD Team

Puchon-City, Kyonggi-Do, Korea 82-3, Dodang-Dong, Wonmi-Ku,

Phone: +82-32-680-1225

Email: jckk@fairchildsemi.co.kr



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FAIRCHILD

Contents

650V/IA, SPS 1-chip process

- Need of SPS 1-chip Process
- Process Features
- Breakdown Mechanism of LDMOS
- Proposed LDMOS Layout
- Comparison to Conventional Layout
- · Embodiment of Battery Charger IC
- Conclusion

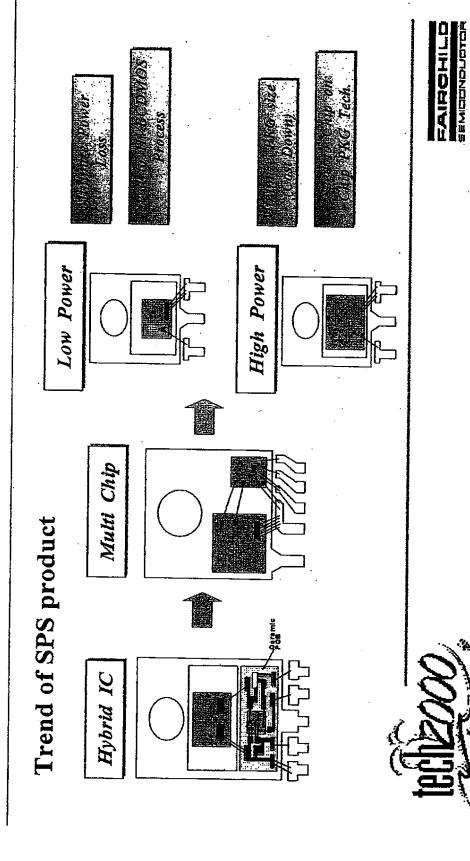


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650V/1A, SPS 1-chip process

Need of SPS I-chip Process



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DAIROH!

Need of SPS I-chip Process

650V/1A, SPS 1-chip process

Compare to hybrid IC, multi chip and 1-chip

	Harbuid IC	Smart F	Smart Power IC
	OL BILLY	Multi Chip	1 Chip
e interpretation of the properties			
Change of Design	Very easy	Easy	Difficult
Market Trend	Smaller	Bigger	Bigger
Competitive Point	Weak	High Power	Low Power
Maker	Sanken Shindenken	FKS, Sanken Sharp, Fuji	PI, SGS, Zimens



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650V / IA, SPS I-chip process

Need of SPS I-chip Process

Reason for decision of 1-chip process

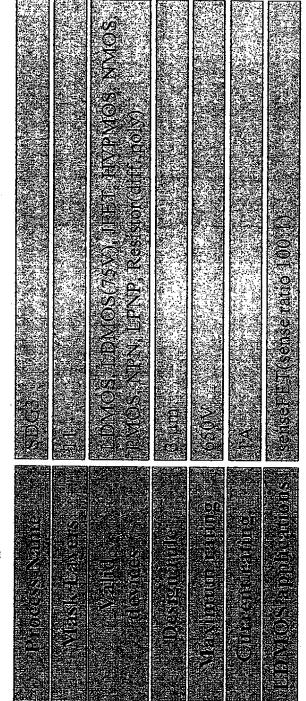
41(33)	High power	Low power dissipation
	- current drive by vertical MOSFET	- start-up switch using JFET
	High power dissipation	Low power
	- existence of start-up resistor	- current drive by LDMOS
	Expensive: EPI, many photo steps,	Cheap: 11 photo steps and no EPI
	2-chip(package, wafer), etc	process



650V/1A, SPS 1-chip process

Process Features

Outline of process





HIGHLY CONFIDENTIAL

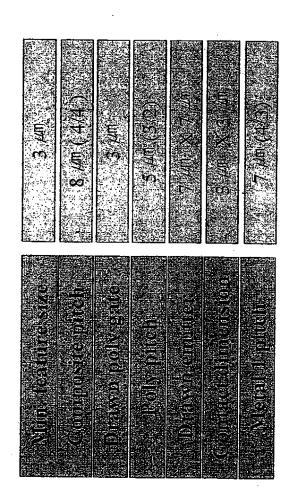
EALECHILCO SEMICONOLOTOR

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650V/1A, SPS 1-chip process

Process Features

Topography Features





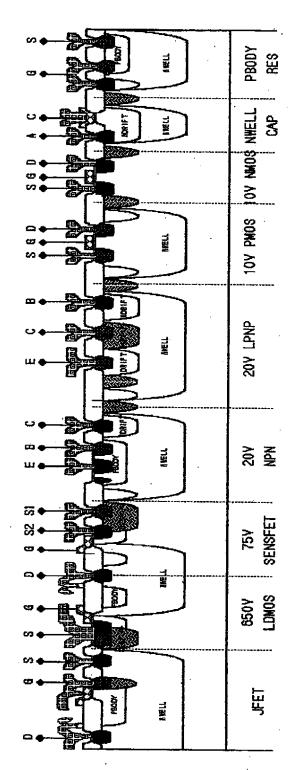
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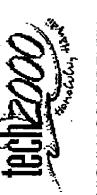
Process Features

650V/1A, SPS 1-chip process

Valid devices







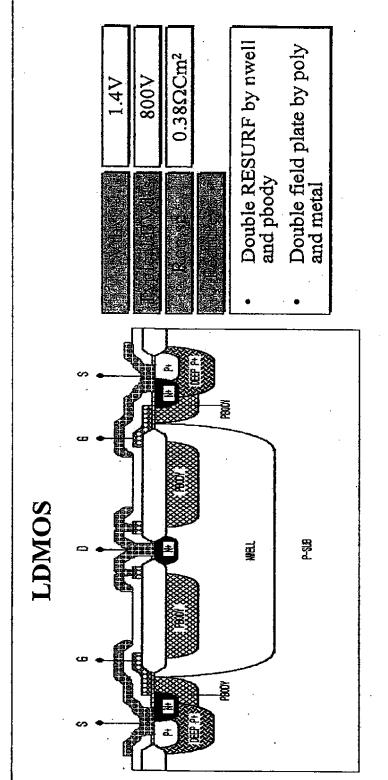
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Process Features

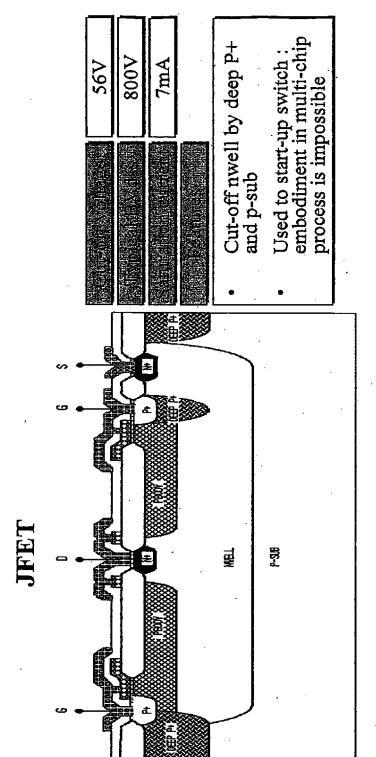
650V/IA, SPS 1-chip process





650V/IA, SPS 1-chip process

Process Features



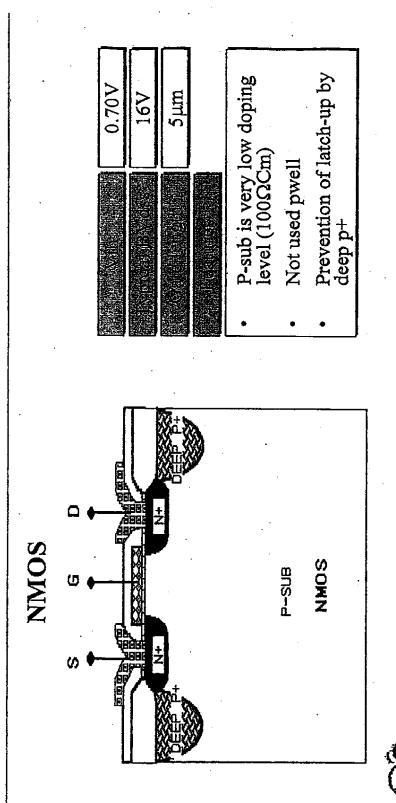


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Process Features

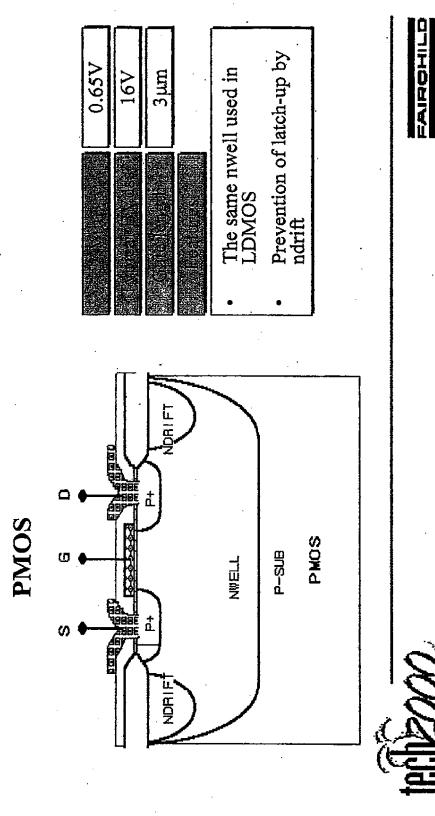




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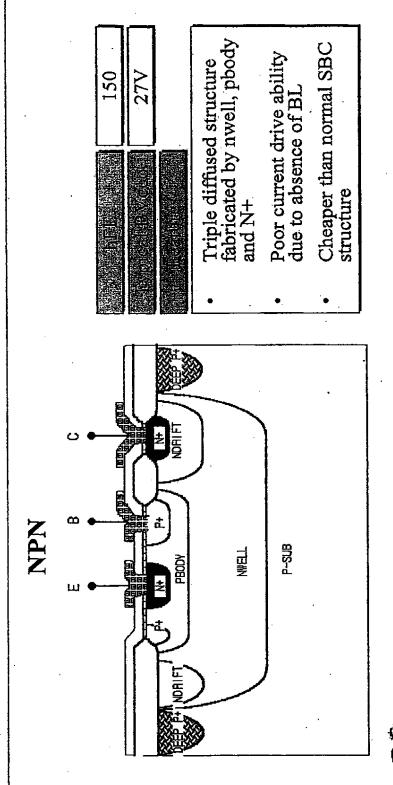


Process Features



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Process Features





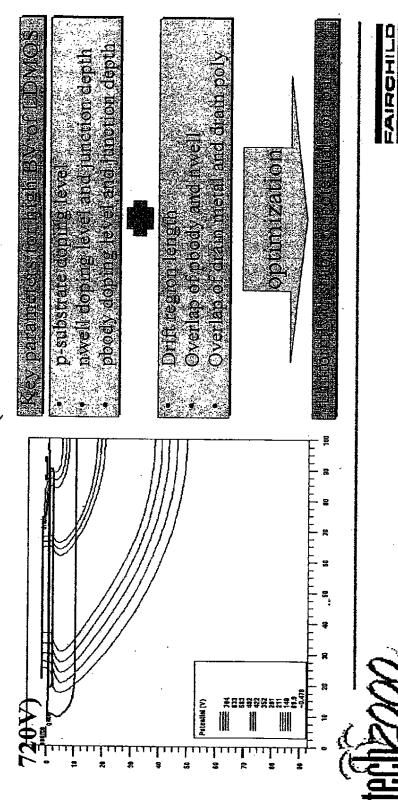
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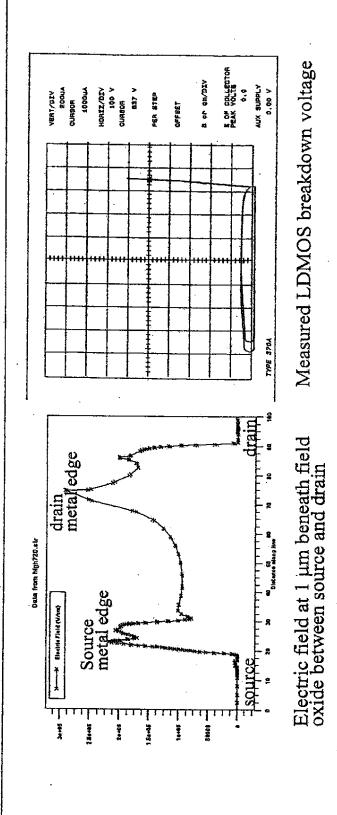
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Breakdown Mechanism of LDMOS

Potential contour of LDMOS(drain bias:



Breakdown Mechanism of LDMOS

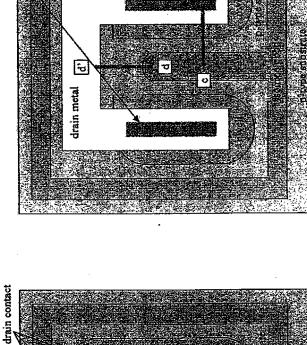


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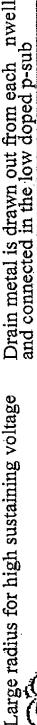
Proposed LDMOS layout

Proposed LDMOS Layout

Conventional LDMOS layout



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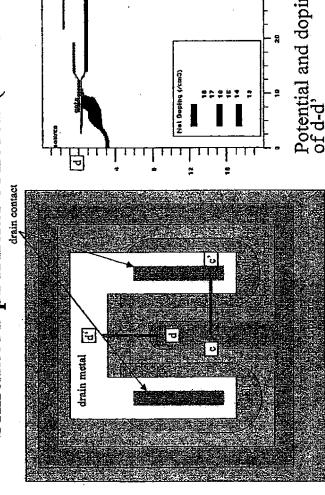


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Proposed LDMOS Layout

Simulated potential contour (drain bias: 720V)



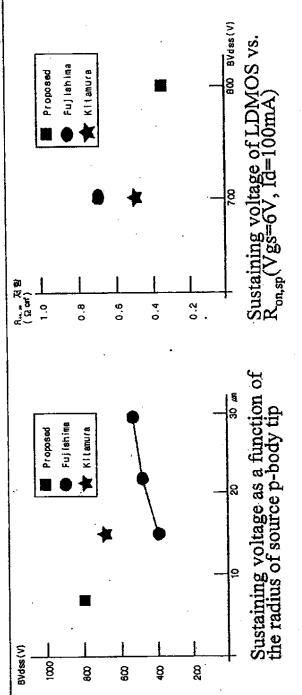
Potential and doping contours of cross section of d-d'

Almost every potential contours exist across the oxide beneath drain metal

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Comparison to Conventional Layout



voltage of 800V even with the radius of 8.5 μm, and shows the better performance of 800V, 0.38 ΩCm² when compared to 700V, 0.55 ΩCm² · Proposed layout indicated the superior characteristics of the sustaining in conventional layout



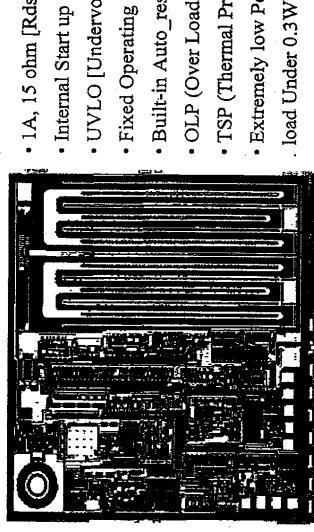
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Embodiment of Battery Charger I(

IC photograph for AC. 220V, battery charger



- 1A, 15 ohm [Rds(on)], Sense LDMOS
- Internal Start up Switch (800V J-FET)
- · UVLO [Undervoltage Lockout]
- Fixed Operating Frequency (100Khz)
- · Built-in Auto_restart
- OLP (Over Load Protection)
- TSP (Thermal Protection)
- Extremely low Power dissipation at no



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Embodiment of Battery Charger IC

Performance of battery charger IC(AR3590X)

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When compared to multi-chip, 1-Chip can be reduced to 54% in the cost and 52% in total around time



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Conclusion

- 650V BCDMOS process was developed
- 650V LDMOS, 650V JFET, 75V LDMOS, 20V HVPMOS, 10V CMOS, 20V Bipolar, and passive devices were implemented
- When compared to multi-chip, 1-Chip can be reduced to 54% in the cost and The 1-chip process is cost effective and high productive 52% in total around time
- Especially, we made compact LDMOS using the patent applied by ourselves

This LDMOS showed the superior characteristics of 800V by 14% in sustaining voltage and 0.38 QCm² by 31% in R_{on,sp} when compared to 700V sustaining voltage and 0.55 \(\text{QCm}^2 \) Ron,sp in conventional LDMOS



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AN OPTIMIZED HIGH VOLTAGE MOS RESURF DEVICE

FIG. I SHOWS A HIGH VOLTAGE LATERAL RESURP D-MOS DEVICE AS PROPOSED BY PHILLIPS THE DEVICE HAS BEEN SHOWN TO VERTICAL D-MOS TRANSISTER. AND COMMERCIALIZED BY AT LEAST GENERAL ELECTRIC. < RFFECTIVE AS 2 AT LEAST

ö COLAK: STATIC PROPERTIES POWER LDMOST Ħ

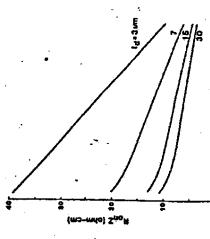
D-MOS DEVICE

LATERAL "RESURF"

H

FIG.

FIG.



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g. 9

 $k_{\rm s}$ 5. The effects of the accumulation layer length $L_{\rm a}$ on the limiting arrestsance of the LDMOST for different epitaxial layer thicknesses. Other parameters are the same as

EXTENSION WILL CREATE AN ACCUMULATION REGION AND EASE FOR OBTAINING A LOW ON RESISTANCE THE EXTENSION LA OF CURRENT SPREADING FROM THE DRAIN EDGE OF THE CHANNEL. THIS THE GATE OVER THE DRAIN REGION IS VERY IMPORTANT, ESPECIALLY FOR THIN EPI LAYERS, SEE FIG. II.

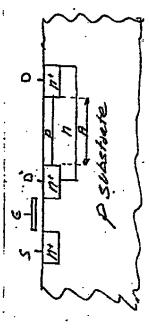
FURTHER BEEN SHOWN THAT THE PRODUCT Nepl X Depi Can BE INCREASED BY A FACTOR OF TWO IF THE BPI THE BREAKDOWN VOLTAGE WILL THEN BE DETERMINED BY THE DISTANCE "A" BETWEEN THE BODY AND DRAIN CONTACT. THUS DECREASING THE ON RESISTANCE WITH ABOUT A FACTOR OF DIFFICULT TO APPLY TO THE STRUCTURE IN PIG. TEUT HAS BEEN APPLIED TO FERTS FOR OPTIMUM VOLTAGE PERFORMANCE IT HAS BEEN SHOWN THAT Nepi X Depi $\simeq 10^{12}$ IS DEPLETED FROM BOTH SIDES. THIS IS IT HAS REGION

Case No. 04-1371-JJF

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A WAY TO APPLY THIS TO CREATE A HIGH VOLFAGE MOS DEVICE IS TO CASCODE THE JFET WITH A CONVENTIONAL MOS TRANSISTER. SEE FIG. III

FIG. III N-CHANNEL TRANSISTERS CASCODED WITH A JFET OR PINCH RESISTOR.



(THE PINCH VOLLAGE) THE INCREASED VOLLAGE IS TAKEN UP BY THE LIFFT IN THIS CASE USED AS A PINCH RESISTOR. THE BREAKDOWN VOLTAGE IS DETERMINED IN THE SAME WAY AS FOR THE LATERAL D-MOS DEVICE BY THE DISTANCE A AND THE DOPING OF THE SUBSTRATE. OR V

IN MANY WAYS THIS DEVICE IS SUPERIOR COMPARED TO THE LATERAL D-MOS DEVICE AS SHOWN IN FIG. I

- THE CHARGE IN THE DRIFT REGION CAN BE INCREASED BY A FACTOR OF TWO, LOWERING ON RESISTANCE.
 - THE HIGHLY DOPED n+ D1 REGION IS MORE EFFECTIVE THAN THE ACCUMULATION REGION OF THE D-MOS DEVICE FOR CURRENT SPREADING FROM THE DRAIN EDGE OF THE CHANNEL, LOWERING ON RESISTANCE
- THE n-CHANNEL DEVICE WILL HAVE LOWER V_T (0.5 1 VOLT) THAN THE D-MOS DEVICE (2-3 VOLT), LOWERING ON RESISTANCE
- LOWER GATE CAPACITANCE, NO EXTENSION OF THE GAT OVER THE DRAIN REGION.
- VERY GOOD PROCESS COMPATIBLITY WITH CS-2 OR CS-51. TO FULLY OPTIMIZE THE DEVICE JUST ONE ADDITIONAL MASK IS NEEDED